

# A NEW SPECIES OF *NEOTRICHIA* (TRICHOPTERA: HYDROPTILIDAE) FROM COLORADO WITH ADDITIONS AND CORRECTIONS TO THE DISTRIBUTION AND RECORDS OF COLORADO TRICHOPTERA<sup>1</sup>

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**ABSTRACT:** *Neotrichia downsi*, new species, is described from Jackson County, Colorado. Illustrations of the male and female genitalia are provided. Additions and corrections to the list of Colorado Trichoptera are also included. Fifteen species are added to the Colorado list, bringing the total number of species reported from Colorado to 188.

As part of continuing studies on the taxonomy and distribution of Rocky Mountain Trichoptera, a new hydroptilid caddisfly was discovered in material collected by Dr. Wilbur G. Downs from the North Platte River. Notes on new distributional records of other Colorado Trichoptera and corrections to the list by Herrmann *et al.* (1986) are also provided.

## *Neotrichia downsi*, new species

Figure 1

**Male:** Body and appendages typical for subgenus, light brown, total body length 2 mm. Bracteole of IX segment constricted throughout basal third. In dorsal view, membranous X tergite evenly tapered, a pair of stout setae located laterally, approximately one-third from apex. Inferior appendages heavily sclerotized; ventrally triangular, with a minute, mesal tubercle near midpoint; rapidly tapered in lateral view, apex slightly upturned, bearing several minute tubercles. Subgenital plate heavily sclerotized, massive; in lateral view hooked slightly ventrad apically, extending 0.75 length of inferior appendage. Phallus with long, wide basal portion, tapering evenly to constriction at spiral process, apical portion slightly expanded at base with apex incised; spiral process encircles phallus approximately 1.5 times.

**Female:** Body and appendages typical for subgenus, light brown, no apparent sexual dimorphism, total body length 2 mm. Sclerotized portion of VIII sternite resembling an inverted champagne glass. Bursa with apex long and slender. Scale-like setae at distal margin of VII sternite smoothly rounded at apex.

**Etymology:** Named for the collector, Wilbur G. Downs, in recognition of his extensive collection of insects from the type locality.

**Holotype male:** Colorado, Jackson County, Ginger Quill Ranch at the North Platte River, altitude 2,370 meters (7,700 feet) above mean sea level, 7 July 1986, W.G. Downs, black light trap collection. Deposited in the Illinois Natural History Survey collection.

**Paratypes:** Same as above, except 4 July 1987, 1 male, 1 female. The female is in poor condition, only the abdomen is relatively intact. Deposited in the United States National Museum collection.

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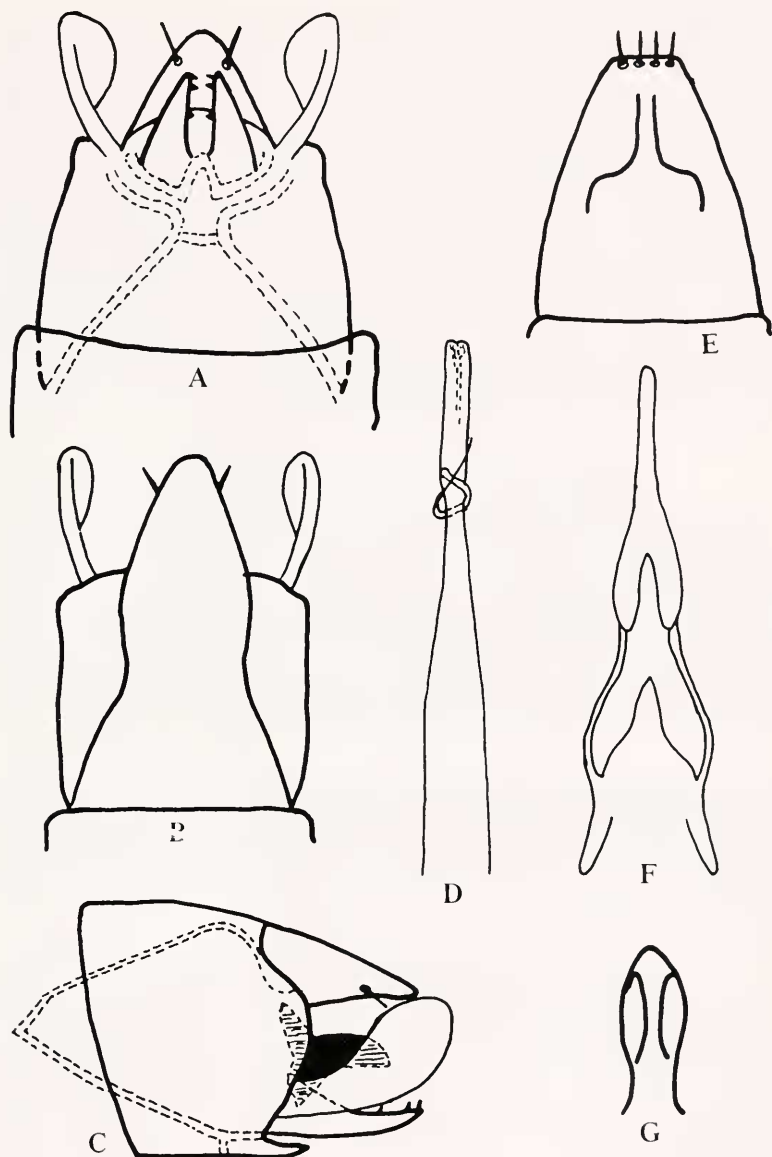


Fig. 1. *Neotrichia downsi*. A. male, apex of abdomen, ventral; B. male, apex of abdomen, dorsal; C. male, apex of abdomen, lateral; D. male, phallus, ventral; E. female, VIII sternite; F. female, bursa, ventral; G. female, scale setae of VII sternite.

This species belongs to the *collata* species group, closely related to *N. okopa* Ross, *N. sonora* Ross and *N. osmena* Ross. This species appears most similar to *N. okopa* Ross from which it can be readily separated by the dorso-ventrally flattened inferior appendages, constricted basal third of the spatulate lateral appendages, and the evenly tapered X tergite. The new species can be distinguished from *N. sonora* by the absence of the long membranous IX tergite, and lack of long, sclerotized lateral projections on the tenth tergite. *Downsi* differs from *osmena* by the shape of the inferior appendages and lack of the sclerotized, forceps-like structure of the X tergite. However, the phallus of *N. downsi* is indistinguishable from that of *N. osmena*. The female association is inferred from the synchronous collection with the male and the distinct difference from *N. halia* Denning, the only other *Neotrichia* species collected at the type locality during nearly ten years of collecting.

### Corrections and New Distributional Records

*Lepidostoma grisea* (Banks) originally included by Herrmann *et al.* (1986) is removed from the Colorado distribution list. This record was questioned by John Weaver (personal communication) and after a diligent search, this specimen could not be located. Weaver (1988), also synonymized several species of *Lepidostoma* occurring in Colorado (*L. mon-eka* Denning 1968 = *L. ormea* Ross 1946; *L. mira* Denning 1954 = *L. cascaden- se* (Milne) 1936; *L. strophis* Ross 1938 = *L. cinereum* Banks 1899; *L. veleda* Denning 1948 = *L. pluviale* (Milne) 1936).

Since publication of the Colorado list (Herrmann *et al.*, 1986) several new records have been published and additional species collected through the efforts of W.G. Downs, B.C. Kondratieff and this author. The county, known Colorado emergence period, and notes where appropriate are listed below.

*Culoptila cantha* Ross, Jackson County, 2 August.

*Cheumatopsyche speciosa* (Banks), Moffatt County, 11 July. This appears to be the first record of this species west of the continental divide. Previously reported from locations in the east with the most western records being from Montana and Oklahoma (Gordon, 1974; Nimmo, 1987).

*Hydropsyche alhedra* Ross, Grand and Jackson Counties, 23 July - 20 August.

*Hydropsyche bidens* Ross, Weld County, 3 August. Previously reported from the eastern portion of the Great Plains (Hamilton and Schuster,

1979; Nimmo, 1987). Its collection in eastern Colorado indicates it has successfully crossed the prairie to the upper Platte River basin.

*Hydropsyche slossonae* Banks, Grand County, (Schefter and Wiggins, 1986). Jackson County. 15 July - 16 August.

*Hydroptila angusta* Ross, Moffatt County, 11 July. This appears to be the first record for this species from west of the continental divide. Previously reported from the east with western records in New Mexico, Texas and Kansas (Ross, 1944; Schuster and Hamilton, 1978).

*Mayatrichia ayama* Mosely, Mesa County, 30 July.

*Ceraclea arielles* (Denning), Jackson County, 15 July - 9 August.

*Ceraclea resurgens* (Walker), Grand and Moffat Counties, (Herrmann, 1988) 25 July - 1 August.

*Limnephilus apache* Flint, Larimer and Pueblo Counties, 27 July - 2 August. This species has not been reported since Flint's 1965 description from collections in Arizona and New Mexico. The collections in Larimer and Pueblo Counties represent significant northern distributional extensions.

*Limnephilus selatus* Denning, Grand County, 3 August.

*Pycnopsyche guttifer* (Walker), Jackson County, 31 July - 20 September.

*Polycentropus aureolus* (Banks), Jackson County, 1-9 August. Previously reported from the northern states and Canada (Nimmo, 1986) with the nearest records from Idaho and North Dakota.

*Agrypnia colorata* Hagen, Larimer County, 28 June. *A. colorata* is also a seldom reported species. Most records are from Canada (Betten, 1934; Ross and Spencer, 1952) with the nearest previous records from Montana (Roemhild, 1982).

*Gumaga griseola* (McLachlan), Yuma County, 25 June. (Kondratieff and Ward, 1987). I have examined this specimen and while the specimen was about half the typical size of specimens from California, the genitalia were nearly consistent with California specimens. Hamilton and Schuster (1980) also noted structural differences in Kansas populations of *G. griseola*. While it is clear the collection of *Gumaga* is a new record (including a new familial record) for the state, further collections will be necessary to determine the variation within the species.

Given the fairly detailed lists available for several of the adjacent states (Kansas: Schuster and Hamilton, 1978; Hamilton and Schuster, 1979; Hamilton and Schuster, 1980; Utah: Baumann and Unzicker, 1981; Wyoming: Ruiter and Lavigne, 1985), it appears many of the species which may be on the fringe of their distributional areas are also extremely localized in their distribution, having not been reported from neighboring states.

With the removal of four species, the description of one species, and the addition of the 15 species just listed, the total number of Trichoptera species reported from Colorado is 188.

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